

## REMARKS

This paper is filed in response to the Office Action mailed on November 4, 2005. Currently Claims 1-24 are pending in the application. Of these, Claims 20 and 22 are withdrawn from consideration. Claims 1-19, 21, 23, and 24 have been examined and stand rejected.

### The Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

- I. Claims 1-19, 21, and 23 are drawn to a gravity-fed water purification cartridge.
- II. Claims 20 and 22 are drawn to a gravity-fed water purification system.

Applicants affirm the election of Claims 1-19 and 23-24, without traverse.

Applicants have noted an error in the dependency of Claim 21, which has now been amended to depend from Claim 20. Therefore, applicants consider Claim 21 to belong to Group II, and is not elected.

### The Rejection of Claims 16 and 19 Under 35 U.S.C. § 102(b)

Claims 16 and 19 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hatch et al. (U.S. Patent No. 5,897,770). Applicants respectfully traverse the rejection.

For a reference to be anticipatory, the reference must exactly describe the claimed invention. Claim 16 recites, "wherein said dwell chamber is configured to provide treated water flow in a second axial direction opposite to the first axial direction." Claim 19 depends from Claim 16.

As illustrated in FIGURE 3 of the present application, untreated water enters the device through the inlet cap 112. From there, the water exits radially through holes in the inlet cap 112. The water next enters the purifier vessel 132 where it is treated and then exits from the bottom of the purifier vessel 132. After having passed through the purification medium in the purifier vessel 132, the water is considered to be treated water. (Page 3, lines 6-7.) Thereafter, the

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treated water enters the dwell chamber 142. The treated water fills the dwell chamber 142 and spills over the top wall and into the outer skin 116 where it exits from holes located at the bottom of the outer skin 116.

Applicants submit that the Hatch patent fails to teach or suggest a dwell chamber as claimed.

The Examiner indicates that the purified vessel corresponds to element 18, and the dwell chamber corresponds to element 16 of the Hatch patent. However, the Hatch patent teaches that the chamber 16 is filled with water before the water is treated in containment chamber 20 (or 18). In other words, the path of the water in the device described in the Hatch patent is from the sump 4 through the filter medium 10 into the axial chamber 16, then upwards through the holes in the bottom of the containment chamber 20. The containment chamber 20 contains the iodinated resin. Therefore, because the chamber 16 receives untreated water, which is only thereafter treated in the containment chamber 20, the Hatch patent does not describe, at least, wherein the dwell chamber is configured to provide treated water flow in a second axial direction opposite to the first axial direction.

The Hatch patent teaches:

In actual operation, the incoming water flows through the inlet end of the inlet/outlet cap 6 and down into the sump portion 4. The water then flows readily into the exterior of the tubular filtration cartridge 8, through the filtration substance 10, where particulate matter is removed, and is discharged into the central, axial chamber 16 of the tubular filtration cartridge 8. The incoming water flows upward along the chamber 16 and contacts the feeder insert 18 disposed within the axial chamber 16. A portion of the incoming water flows through the flow holes 26 in the upstream end cap 24 and into the upstream containment chamber 20 contacting the feed chemical 22 contained within. The remainder of the incoming water flows around the upstream containment chamber 20 to the metering slots 30, located on the upstream end of the downstream flow bypass chamber 28 and into the bypass chamber 28.

(Col. 8, lines 3-12.)

For a reference to be anticipatory, the reference must exactly describe the claimed invention. Because the Hatch patent, at the very least, does not describe wherein the dwell chamber is configured to provide treated water flow in a second axial direction opposite to the first axial direction, the reference is not anticipatory.

Accordingly, the withdrawal of the rejection of Claims 16 and 19 is respectfully requested.

The Rejection of Claims 1-5, 7-12, 14, 15, 23, and 24 Under 35 U.S.C. § 103(a)

Claims 1-5, 7-12, 14, 15, 23, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hatch, in view of Worley et al. (U.S. Patent No. 6,548,054).

For *prima facie* obviousness, there must first be a suggestion or a motivation, either in the references or in the knowledge generally available to modify a reference or to combine references, there must be a reasonable expectation of success, and all the claim limitations must be taught or suggested by the prior art references.

1. There Is No Suggestion or Motivation

There is no suggestion or motivation, either in the references or in the knowledge generally available to modify the Hatch patent to include the compounds described in the Worley patent. The Court of Appeals for the Federal Circuit has stated:

In making the assessment of differences, Section 103 specifically requires consideration of the claimed invention "as a whole." Inventions typically are new combinations of existing principles or features. *Environmental ENVTL Designs Ltd. v. Union Oil Co.*, 713 F.2d 693, 698 (Fed. Cir. 1983) (noting that "virtually all [inventions] are combinations of old elements.") The "as a whole" instruction entitled 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A+B+C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone, declare the invention obvious. This form of hindsight reasoning, using the invention as a road map to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result-often varied definition of invention. Section 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a

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whole. This court has provided further assurance of an "as a whole" assessment of the invention under § 103 by requiring a showing that an artisan of ordinary skill in the art at the time of the invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner. In other words, the Examiner or court must show some suggestion or motivation, before the invention itself to make the new combination (citations omitted).

*Reiz v. AB Chance Co.*, 357 F.3d 1270, 1275; 69 U.S.P.Q.2d 1686, 1690 (Fed. Cir. 2004).

The Examiner has done what the Federal Circuit warns against. That is, the Examiner has found a primary reference (the Hatch patent) that appears to describe a filter, but lacking the compounds as recited in the claims, and combined the Hatch patent and the Worley patent, without considering the actual teachings of the prior art.

The Examiner states:

Hatch discloses that the purifier vessel contains halogenated ion exchange resin (Col. 8, Lines 20-23) but does not disclose polystyrene hydantoin or hydantoinylated siloxane. Worley teaches halogenated polystyrene hydantoin where the halogen is chlorine or bromine (Col. 3, Lines 32-41). It would have been obvious to one of ordinary skill in the art to modify Hatch with the element of Worley in order to prevent noxious odors (Col. 2, Lines 15-22).

Applicants submit that the motivation or suggestion offered in the Office Action is not sufficient under Section 103.

The motivation or suggestion fails because the teachings of the Hatch patent teach away from the hydantoinylated compounds described in the Worley patent. The Hatch patent teaches that the feed chemical 22 can be any slow dissolving substance that performs a secondary purification or disinfection function on the incoming water. Most typically, the chemical used is a halogenated ion exchange resin. (Col. 8, lines 20-24.) Applicants submit that the hydantoinylated compounds described in the Worley patent are neither dissolvable nor an ion exchange resin. Applicants submit that hydantoinylated compounds function differently than ion exchange resins at killing microorganisms and, therefore, the substitution of ion exchange resins with hydantoinylated compounds is not obvious. Applicants believe that hydantoinylated

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compounds kill microorganisms through a two-step approach. First, the microorganisms come into physical contact with the hydantoinylated compounds. Second, there is a small amount of chlorine or bromine in the water to recharge the hydantoinylated compounds, which by itself is so low as to be insufficient to kill microorganisms; nevertheless, after having contacted the hydantoinylated compounds, the subsequent exposure of microorganisms to this low level of residual chlorine or bromine will effectively kill microorganisms. Such subsequent killing is produced in the dwell chamber of the claimed device. In contrast to hydantoinylated compounds, ion exchange resins release a large amount of iodide ions into the water, which effectively kill the microorganisms. Accordingly, to the person skilled in the art familiar with the respective compounds, ion exchange resins are not interchangeable with hydantoinylated compounds.

The Hatch patent never describes that odor control is a problem to contend with. Furthermore, the Worley patent teaches that odor is controlled because of the elimination of the bacteria that cause the odor. (Col. 3, lines 7-16.) The Hatch patent similarly teaches the elimination of bacteria. (Col. 8, lines 25-32.) Therefore, the device of the Hatch patent would appear to inherently also prevent noxious odors. Therefore, the reason offered for exchanging one type of compound for the other just to prevent noxious odor is not valid, since the compound described in the Hatch patent appears to perform this function. Accordingly, for all the reasons given above, the first element of a *prima facie* rejection is not present.

2. There Is No Reasonable Expectation of Success

Applicants submit that the compounds described in the Worley patent would not function in the device of the Hatch patent because of, at least, the lack of a dwell chamber. Contrary to the Office Action, applicants submit that the Hatch patent does not teach or suggest a dwell chamber. The Office Action simply ignores the different chemistry of iodinated ion exchange resins and the compounds described in the Worley patent. Applicants submit that the two-step approach, described above, for killing microorganisms is not remotely possible with the device

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of the Hatch patent. The Hatch patent simply does not describe a dwell chamber that can be used for additional treatment time of the treated water with residual halogen. The Hatch patent teaches that the water first flows into chamber 16 prior to the containment chamber 20, containing the feed chemical 22. Therefore, the chamber 16 cannot function to further treat water after the feed chemical 22. Accordingly, applicants submit that the compounds described in the Worley patent would not function in the device of the Hatch patent, and it would be unreasonable to expect otherwise. Therefore, the second element of a *prima facie* rejection is not present.

3. The Prior Art References Do Not Teach or Suggest All the Claim Limitations

Finally, since the Hatch patent, at the very least, does not teach or suggest a dwell chamber, as claimed, the third element of a *prima facie* rejection is not present.

Accordingly, the withdrawal of the rejection is respectfully requested.

The Rejection of Claims 1, 2, 4-6, 11-15, 23, and 24 Under 35 U.S.C. § 103(a)

Claims 1, 2, 4-6, 11-15, 23, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead (U.S. Patent No. 5,308,482) in view of Worley.

The Examiner states that the Mead patent discloses the outer skin and dwell chamber to provide an annular space. The Examiner further states that the outer skin corresponds to element 34 in the Mead patent. However, the Mead patent characterizes element 34 as a top plate. (Col. 2, line 37.) Furthermore, the top plate 34 described in the Mead patent is enclosed within the device and, therefore, cannot be an "outer" skin. (Figure 3.) Claims 1 and 23 have been amended to clarify that the dwell chamber is enclosed within the outer skin. Support for this amendment is found in the specification on page 7, lines 30-33, and Figure 3. Claims 2, 4-6, 11-15, and 24 depend from either Claim 1 or Claim 24.

The Examiner goes on to state:

Mead discloses that the purifier vessel contains a microbiocide but does not disclose a polymer having pendant hydantoin groups. Worley teaches

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halogenated polystyrene hydantoin. (Col. 3, Lines 32-41). It would have been obvious to one of ordinary skill in the art to modify Mead with the element of Worley because it is a biocide used in water filters. (Col. 2, Lines 15-22).

For *prima facie* obviousness, there must first be a suggestion or a motivation, either in the references or in the knowledge generally available to modify a reference, there must be a reasonable expectation of success, and all the claim limitations must be taught or suggested by the prior art.

As discussed above, the Federal Circuit warns against an obviousness assessment by parts instead of as a whole. Section 103 precludes hindsight reasoning. The motivation offered for substituting the compounds of the Mead patent with those of the Worley patent is simply "because it is a biocide used in water filters." This explanation fails to comply with Section 103 because the statement merely employs hindsight reasoning, since it ignores the teachings of the references, and the differences in chemistry of iodinated ion-exchange resins and the compounds taught in the Worley patent.

The Mead patent, like the Hatch patent, teaches the use of ion exchange resins as the preferable microbiocide material. (Col. 3, lines 11-19.) Accordingly, there is no teaching or suggestion to combine the Worley patent with the Mead patent.

Furthermore, the outer skin is indicated by the Examiner to be element 34 in the Mead patent. However, element 34 is, in fact, a top plate that is placed on top of the element 30, not in a side-to-side relationship to resemble a dwell chamber enclosed within an outer skin. Accordingly, the Mead patent does not teach or suggest an outer skin coupled to the bulkhead and enclosing the dwell chamber, wherein the outer skin and dwell chamber provide an annular space therebetween.

Accordingly, the withdrawal of the rejection is respectfully requested.

The Rejection of Claims 17, 18, and 21 Under 35 U.S.C. § 103(a)

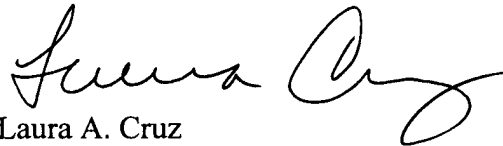
Claims 17, 18, and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hatch, in view of Worley.

Claims 17 and 18 are independent from Claim 1. Applicants submit that Claim 1 is allowable. Applicants submit that Claim 21 should be withdrawn as being drawn to a non-elected invention. Accordingly, the withdrawal of the rejection of Claims 17 and 18 is respectfully requested.

In view of the foregoing amendment and remarks, applicants respectfully submit that Claims 1-19, 23, and 24 are in condition for allowance. If the Examiner has any further questions or comments, the Examiner may contact the applicants' attorney at the number provided below.

Respectfully submitted,

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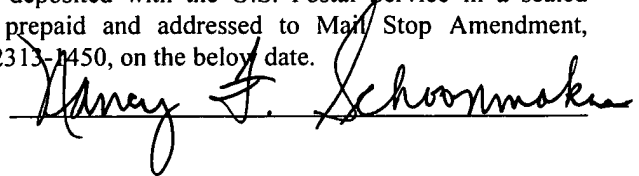


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